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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/994,446	11/27/2001	Richard C. Walker	10004017-1	9514

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EXAMINER

CORRIELUS, JEAN B

ART UNIT PAPER NUMBER

2611

DATE MAILED: 08/22/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/994,446

Applicant(s)

WALKER, RICHARD C.

Examiner

Jean B Corielus

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 03 July 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-41 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 19-27 and 33-36 is/are allowed.
- 6) ☒ Claim(s) 1-6, 10, 14, 28, 32, 38, 39, 40, 41 is/are rejected.
- 7) ☒ Claim(s) 7-9, 11-13, 15-18 and 29-31 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 2, 5 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jinbo et al US Patent No. 6,438,081 in view of Robinson et al US patent No. 6,624,668.

As per claim 1, Jinbo et al discloses a multi phase sampling system having: a plurality of samplers (FFa-FFe), each sampler sampling a same input (24) when a clock signal of one of respective of phases (phases a-e) is received by respective sampler, each sampler sampling a transition of the input signal and outputting a respective output see drawing figs. 2 and 7 and col. 7, Lines 52-59. However, Jinbo fails to teach that the sampler samples both transition and data and that it fails to teach that the data between transitions. Robinson teaches a plurality of latches each configured to sample the middle and the edge of the data period (note that since the data is in the center of a data period it has to be between transitions) see col. 7, line 64-col.8, line 11. Given that fact, it would have been obvious to one skill in the art to incorporate such a teaching in Jinbo in order to accurately the original signal.

As per claims 2 and 37, the system includes an odd number of samplers see fig. 7.

As per claim 5, Jinbo discloses every feature of the claimed invention but does not teach explicitly that the multiphase system is a receiver in communication with a multiphase transmitter. However, it would have been obvious to one skill in the art to implement the multiphase system in a receiver in communication with a multiphase transmitter in order to satisfy system design requirements. In addition, such modification would have allowed the system with the capability to send and process signal remotely

As per claim 6, it would have been obvious to one skill in the art to incorporate the multiphase system in a transmitter and the reasons to do so would have been the same as provided with respect to claim 5.

Claims 3, 4, 38 and 39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jinbo et al in view of Robinson et al and further in view of LaRosa et al US patent No. 5,247,544.

As per claims 3 and 38, as applied to claim 1 above, Jinbo and Robinson et al disclose every feature of the claimed invention but does not explicitly teach the generation of respective phase error based on each of the respective output signals. In the same field of endeavor, LaRosa discloses the further limitations of generating respective phase errors 347-353 from the output signal generated by the samplers (303-309). Given that fact, it would have been obvious to one skill in the art to incorporate such a teaching in Jinbo et al in order to provide an estimate of the quality

of the received signal so that proper correction can be made to ensure accurate recovery of the transmitted data signal see abstract, col. 1, Lines 26-46 and col. 4, Lines 27-52.

As per claims 4 and 39, note that LaRosa teaches a circuit 327 for phase shifting one or more of the phases in accordance with the respective phase error see col. 4, Lines 35-52. Given that it would have been obvious to one skill in the art to incorporate such a teaching in Jinbo et al and Robinson et al and the reasons to do so would have been the same as provided above with respect to claim 3.

3. Claims 10, 14, 28, 32, 40 and 41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jinbo et al in view of Robinson et al and in view of LaRosa et al US patent No. 5,247,544.

As per claims 10 and 28, Jinbo discloses a system comprising a first sampling device FFa configured to receive a first data signal 24 and a first clock signal clk1 and includes a first sampling logic configured to sample the first data signal when the first clock signal is received and to generate a first output signal see fig. 7, a second sampling device FFb configured to received the first data signal 24 and a second clock signal clk2 and includes a second sampling logic configured to sample the first data signal when the Page 5 second clock signal is received and to generate a second output signal see sg. 7; a third sampling device clock signal clk3 and includes a third sampling logic configured to sample the first data FFc configured to received the first data signal 24 and a third signal when the third clock signal is received and to generate

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a third output signal see fig. 7; a phase discrimination portion 40 for generating a phase error in response to the first second and third output signals. However, Jinbo et al does not Jinbo fails to teach that the sampler samples both transition and data and that it fails to teach that the data between transitions. It also fails to explicitly teach the generation of respective phase error based on each of the respective output signals and a phase shifter for shifting the phase of at least one of the first second or third phases in accordance with the respective first second and third phase error indications. Robinson teaches a plurality of latches each configured to sample the middle and the edge of the data period (note that since the data is in the center of a data period it has to be between transitions see col. 7, line 64-col. 8, line 11. Given that fact, it would have been obvious to one skill in the art to incorporate such a teaching in Jinbo in order to be able to produce proper phase compensation values so as to recover accurately the original signal. In addition, LaRosa discloses the further limitations of generating respective phase errors 347-353 from the output signal generated by the samplers (303-309). LaRosa teaches a circuit 327 for phase shifting one or more of the phases in accordance with the respective phase error see col. 4, lines 35-52. Given that fact, it Would have been Obvious to One Skill in the ad to incorporate such a teaching in Jinbo et al and Robinson in order to provide an estimate of the quality of the received signal so that proper correction can be made to ensure accurate recovery of the transmitted data signal see abstract, col. 1, lines 26-46 and col. 4, Lines 27-52.

As per claims 14, 32 and 41, it would have been obvious to one skill in the art to configure the phase determination circuit based on an Alexander Phase determination Truth Table algorithm in order to take advantage of its enhanced technological features.

As per claim 40, it would have been obvious to one skill in the art to create a program code to perform the function of the device as recited in the claim 10, for instance, in order to eliminate the need for acquiring physical components that can be expensive to implement the system.

#### Allowable Subject Matter

4. Claims 7-9, 11-13, 15-18, 29-31 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

5. Claims 19-27 and 33-36 are allowed.

#### ***Response to Arguments***

6. Applicant's arguments filed 7/3/06 have been fully considered but they are not persuasive. It is alleged that Robinson et al and Jinbo et al are not in the same field of endeavor therefore the combination is improper. However, it is noted that the section of the disclosure of Jinbo et al and the section of the disclosure of Robinson relied upon by the examiner relates to the same subject matter i.e. parallel sampling of an input signal and therefore are in the same field of endeavor. Accordingly, examiner maintains that the rejection is proper. It is further alleged that there is no evidence that each latch

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samples both the middle and edge of a data period. However, at col. 8, lines 5-12, Robinson clearly teaches that a plurality of input data lines are provided to the ten latches and that each input data is sampled twice per data bit, i.e. middle and edge of the data period. In order to sample the same **data bit** twice, the same latch has to be used and such a sampling can easily be accomplished by setting the sampling clock of each latch so that a sample is taken for the middle and edge of each data bit .

Applicant further alleges that it appears that five latches sample the middle of the data period and the other five latches produce at the edge of the data period to sample.

Admitting that applicant was correct (examiner does not believe so) , applicant's claimed invention would still read on the teaching of Robinson. The ten latches taught by Robinson would be set in pairs, each pair would sample both the middle and the edge of each data bit. Examiner would consider each pair of latches as a single sampling device configured to sample both the middle and the edge of the same data bit. Examiner believes that Jinbo et al and Robinson taken in combination render applicant's claimed invention obvious and therefore sustains the art rejection. Applicant further argues that no motivation is provided to combine Jinbo et al Robinson et al and LaRosa et al, however it is noted that the office action includes proper motivation to combine the references.

### ***Conclusion***

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).




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A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jean B. Corrielus whose telephone number is 571-272-3020. The examiner can normally be reached on Maxi-Flex.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jay Patel can be reached on 571-272-2988. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
JEAN B. CORRIELUS  
PRIMARY EXAMINER  
TC - 2600

8-17-06